

The challenge and input of genetic engineering to organic agriculture

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Introduction:

Genetic engineering does not respect the inherent nature of plants and animals since it treats living things as mere factors of production, to be reconstructed as if they were machines. It therefore runs contrary to the fundamental principles of organic agriculture and is not at all compatible with organic farming. The application of genetic engineering in conventional agriculture has negative effects on organic agriculture itself (e.g. cross-pollination), which is why the organic movement opposes genetically manipulated organisms in agriculture and food. There is no co-existence possible. Since genetic engineering is strictly banned in organic standards and regulations, certified organic food does offer a fundamental GMO risk reduction for consumers.

Genetic engineering runs counter to the holistic principle of organic agriculture

It is not only a fundamental principle, but also the reality of organic agriculture, to optimise the production system as a whole by intensifying the power and creativity of nature. Therefore, the reductionist approach of genetic engineering does not fit into the objectives and principles of organic agriculture..

Genetically engineered breeds and varieties rely on a high input system of agriculture. Genetic engineering will result in even more industrialisation and globalisation of agriculture, which conflicts with the objectives of organic agricultural production and processing, as well as with predominately regional/local marketing objectives. Genetic engineering introduces a new and ultimate level of risk that is no longer limited in time or space. This is contrary to organic agriculture, which seeks instead to stabilise the production system using natural means. Genetic engineering does not contribute overall to a reduction of chemical inputs. If we look at herbicide tolerant 'Round-up Ready' GMO plant varieties, we actually see an increase in chemical inputs. The necessary large-scale sale of genetically manipulated varieties and breeds will further destroy what remains of biodiversity. Diseases and hereditary biases will spread much more quickly. 'Patenting of life', which also comes with genetic engineering, represents a

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further threat to traditional breeding and will therefore bring very negative consequences to organic farming. And finally: genetic engineering does not respect the inherent nature of plants and animals since it treats living things as mere factors of production, to be reconstructed as if they were machines.

What organic agriculture has to offer 'instead'

Organic agriculture principles foster decentralisation, and are based on closed cycle concepts (1). The holistic 'nature' of organic agriculture includes, apart from ecological aspects, economic, social, cultural and gender considerations. Organic agriculture offers flexibility, e.g. with 7-12 year crop rotations, versus monocultures. It is also more energy efficient and not dependent on 'chemical' inputs (like synthetic fertilisers). Organic agriculture keeps animals and land in a balance. For example, organic cows are fed by and large on what grows on the farm where they live instead of imported feedstuff. Impressive scientific evidence shows that organic agriculture enhances biodiversity and also creates diversified and beautiful landscapes (2).

Organic agriculture does not contribute further to the ongoing global pollution of the environment and, as a matter of fact, offers a profound environmental risk reduction. As environment needs and our societies look for solutions in this context, organic agriculture can offer an impressive pesticide and GMO risk reduction. No form and practice of agriculture is more defined and, controlled (with guaranteed label schemes) than organic agriculture. Organic agriculture is also economically more profitable for the farmers.

This short profile of the contributions of organic agriculture gives some substance to the claim: 'Organic agriculture is sustainable agriculture put into practice.'

Sustainable "biotechnology"?

Under the name 'sustainable biotechnology', the gene-tech industry is still trying to sell the package of modern biotechnology to countries in the South. Examples include "bio-fertilisers" such as Azolla, bio-pesticides such as pyrethrum, herbal veterinary products etc. However, these so-called 'sustainable biotechnology' products are merely examples of existing non-manipulated organisms that are used within traditional agriculture.

Transnational corporations are very interested in exploiting these resources and traditional knowledge as they offer the opportunity to bring local indigenous knowledge under industrial control through patents, and by the use of seed and gene-banks. Production of analogous, synthetic products will be industrially

organised, controlled and sold worldwide. These genetically engineered products are often promoted as 'sustainable' products, although such a description is highly misleading.

Conclusions

Genetic engineering is not compatible with organic farming. It runs contrary to the fundamental principles of organic agriculture. Its application outside organic agriculture will also have negative effects on organic agriculture itself, which is why our movement generally opposes GMOs in food and agriculture.

There is no reason to presume that genetically engineered products contribute to a more sustainable agriculture. Indeed, the evidence leads to the opposite conclusion that rather than offering solutions there will be a worsening of existing problems (3).

You cannot solve the problem with the same kind of thinking that has created the problem (Albert Einstein)

... and that is why we do not need GMO technologies, but the radical paradigm shift which comes with organic agriculture.

References

1. IFOAM Basic Standards 2003
 2. Dossier No 2, Biodiversity and Organic Agriculture 2002
 3. GMO Brochure Genetic Engineering versus Organic Agriculture 2002
- Are available from IFOAM (www.ifoam.org)